REMARKS

A. Request for Reconsideration

Applicants have carefully considered the matters raised by the Examiner in the outstanding Office Action but remain of the position that patentable subject matter is present. Applicants respectfully request reconsideration of the Examiner's position based on the amendments to the specification, the amendments to the claims and the following remarks.

B. The Invention

The present invention is directed to a radiographic image conversion panel and method for manufacturing the radiographic image conversion panel.

In one of the novel aspects of the invention, the radiographic image conversion panel has at least one photostimulable phosphor layer formed on a support by vapor deposition, and the photostimulable phosphor layer is formed while heating one face of the support and simultaneously cooling the other face of the support.

Applicants have discovered that the temperature of the support can be accurately controlled in the present invention thereby producing a radiographic image conversion panel having improved sensitivity and sharpness (page 43, lines 5-19).

C. Claim Status and Amendments

Claims 1-12 are presented for further prosecution. Claims 1-4 and 9-12 have been withdrawn from consideration. Claims 5-8 are therefore currently under examination.

Claim 5 has been amended to more clearly recite that the heating and cooling steps are performed at the same time. Support for this amendment can be found at page 43, lines 5-19 and in Figures 5-7 which show the deposition apparatus composed of heaters 2a,2b and cooling member 5.

Claims 13-16 directed to a method of forming a radiographic image conversion panel have been added by this amendment. Claims 13-16 basically mirror the subject matter of claims 5-8, except that claims 13-16 are method claims instead of product claims.

The Examiner may recall that Applicants had elected to prosecute claims 5-8 of Group II in reply to the Restriction Requirement dated June 1, 2005. Since the restriction was based on the fact that claims 5-8 are directed to a conversion panel where one face of the support is heated and the other face is cooled, Applicants believe that it is proper to examine new claims 13-16 with claims 5-8.

D. Specification Amendments

Applicants have amended Table 2-1 appearing at page 68 of the application to correct typographical errors. Original Table 2-1 had respectively referred to the deposition devices of Figures 4, 5, 1, 2 and 3. This is an obvious typographical error since Figures 1-4 do not illustrate deposition devices.

Applicants have amended Table 2-1 to refer to the correct deposition devices. The type of deposition devices in amended Table 2-1 correctly correlates with the final column of Table 2-1, since the deposition devices of Figures 8 and 9 have heaters 2a,2b and no cooling member 5, while the deposition devices of Figures 5-7 have heaters 2a,2b and cooling member 5.

E. The Office Action

Claims 5-8 had been rejected as being anticipated by Morikawa (US 2005/0040340). The Examiner had taken the position that the deposition device and method of Morikawa meets the limitations of claims 5-8.

1. The significance of simultaneously heating one face of the support and cooling the other face as recited in claim 5

Applicants have amended claim 5 to more clearly recite that one face of the support is heated at the same time that the other face of the support is cooled during vapor deposition.

Figures 8 and 9 of this application illustrate conventional deposition techniques that use heaters 2a,2b to heat support 3 during deposition (page 45, lines 3-12 and page 45, line 17 to page 46, line 13). In contrast to the conventional devices of Figures 8 and 9, the devices according to the present invention illustrated in Figures 5-7 additionally contain cooling member 5 which cools the opposite face of support 3 (page 48, lines 1-10, page 49, lines 8-13, and page 49, line 25 to page 50, line 6).

Applicants have discovered that it is difficult to control the temperature of the support during deposition using the conventional devices of Figures 8 and 9. As a result, the thickness of the phosphor layer varies and luminance and sharpness decrease (page 46, line 22 to page 47, line 17). However, as shown in amended Table 2-1 and Table 2-2 at pages 68-69 of the application, the deposition techniques of the present invention produce an image conversion panel having high sensitivity and sharpness compared to the conventional deposition techniques.

2. Morikawa does not teach or suggest forming the phosphor layer by simultaneously heating one face of the support and cooling the other face

The Examiner had cited pars. 97, 109-114, 183, 184 and 238-241 of Morikawa to teach simultaneously heating one face of the support and cooling the other face during deposition as recited in claim 5. Applicants respectfully submit that Morikawa does not teach or suggest this aspect of the present invention and will discuss the cited portions of Morikawa below.

Par. 97 of Morikawa explains that the temperature of the support is controlled during deposition. Cooling the other face of the support during deposition is not disclosed in par. 97. Par. 97 corresponds to the conventional deposition techniques illustrated in Figures 8 and 9 of the application described above.

Pars. 109-114 of Morikawa explain that "the support is charged" in a water cooled crucible and that the temperature of the support is controlled during deposition. It appears that the Examiner believes that the water cooled crucible of Morikawa cools the support in the manner recited in claim 5. Applicants respectfully disagree.

Those skilled in the art are aware that crucibles are used to hold the solid phosphor during evaporation of the phosphor. After evaporation, the phosphor vapor moves toward and deposits on the support. Thus, the support and the crucible are generally located apart from each other.

In conventional terminology, the evaporation source (crucible) is charged, not the support as stated by Morikawa (see pars. 85 and 175 of Morikawa, page 21, lines 17-18 of the application and page 53, line 5 of the application). Thus, "charging the support" as explained in par. 113 of Morikawa is more accurately characterized as "charging the crucible to deposit vapor on the support".

Thus, according to the understanding of those skilled in the art, "charging the support" as stated by Morikawa is not cooling the support as recited in claim 5. Applicants therefore respectfully submit that pars. 109-114 of Morikawa do not suggest simultaneously heating one face of the support and cooling the other face as recited in claim 5.

With regard to pars. 183 and 184, Morikawa teaches heating or cooling the support. In addition, pars. 238-241 again explain that the "support" is charged in a water cooled crucible. Pars. 183, 184 and 238-241 of Morikawa therefore do not teach or suggest heating one face of the support and cooling the other face as recited in claim 5. It is respectfully

submitted that the present invention is patentable over Morikawa.

3. Morikawa does not teach or suggest simultaneously heating and cooling, let alone heating one face and cooling the other face

In section 2 above, Applicants have discussed that those skilled in the art understand that "charging the support" as taught by Morikawa actually means "charging the crucible to deposit vapor on the support". However, in case the Examiner believes otherwise, Applicants have two additional reasons why the present invention is patentable over Morikawa.

First, even if Morikawa teaches heating and cooling the support, Morikawa does not specifically teach simultaneously heating and cooling as recited in claim 5. As shown in amended Table 2-1 and Table 2-2 of the application, simultaneous heating and cooling produces an image conversion panel that is high in sensitivity and sharpness. Morikawa does not suggest that high sensitivity and sharpness are achieved by simultaneously heating and cooling the support.

Second, Morikawa does not suggest that one face of the support is heated while the other face is cooled, since Morikawa makes no distinction between different faces of the support. Morikawa therefore does not suggest this feature of present invention recited in claim 5.

Applicants therefore respectfully submit that the present invention is patentable over Morikawa, since Morikawa does not suggest simultaneously heating and cooling the support, and especially not simultaneously heating one face and cooling the other.

F. Conclusion

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance and such action is respectfully requested. PTO Form 2038 is enclosed herewith authorizing payment of the appropriate government fee for one additional Independent claim. Should any further fees or extensions of time be necessary in order to maintain this

Application in pending condition, appropriate requests are hereby made and authorization is given to debit Account # 02-2275.

Respectfully submitted,

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